

What is claimed is:

1. A look-ahead decision feedback equalizing receiver comprising:

5           an equalizing block for amplifying a high-frequency component of an external data signal fed thereto in response to a predetermined first input signal and a predetermined second input signal, to provide a first equalized external data signal and a second equalized external data signal,  
10 respectively;

              a clock synthesizer for outputting a plurality of sampling clocks, a timing thereof being adjusted by receiving an external clock synchronized with the external data signal;

15           an over-sampler for over-sampling the first equalized external data signal and the second equalized external data signal in synchronization with the sampling clocks;

              a MUX block for multiplexing the outputs of the over-sampler in response to preceding outputs of the MUX block,  
20 which serve as select signals for the MUX block, to thereby attain MUX decision results; and

              a phase detector for deciding the timing of the sampling clocks by analyzing the MUX decision results.

25        2. The look-ahead decision feedback equalizing receiver of claim 1, wherein the equalizing block includes:

a first equalizing amplifier, to which the predetermined first input signal is fed, for providing the first equalized external data signal; and

5 a second equalizing amplifier, to which the predetermined second input signal is fed, for providing the second equalized external data signal;

and the over-sampler includes:

10 an over-sampler even and an over-sampler odd, to which both the first equalized external data signal and the second equalized external data signal are fed, respectively.

3. The look-ahead decision feedback equalizing receiver of claim 1, wherein the equalizing block includes:

15 an equalizing block even and an equalizing block odd, the equalizing block even having a first equalizing amplifier, to which the predetermined first input signal is fed, for providing the first equalized external data signal and a second equalizing amplifier, to which the predetermined second input signal is fed, for providing the second equalized external data signal, and the equalizing block odd having a third equalizing amplifier, to which the predetermined first input signal is fed, for providing the first equalized external data signal and a fourth equalizing amplifier, to which the predetermined second input signal is fed, for providing the second equalized external data signal;

and the over-sampler includes:

an over-sampler even to which the outputs of the first  
and the second equalizing amplifier are fed; and

an over-sampler odd to which the outputs of the third  
5 and the fourth equalizing amplifier are fed.

4. The look-ahead decision feedback equalizing receiver of  
claim 2, wherein the over-sampler even over-samples the  
first equalized external data signal and the second  
10 equalized external data signal in synchronization with a 0°  
and a 90° phase sampling clocks, and the over-sampler odd  
over-samples the first equalized external data signal and  
the second equalized external data signal in synchronization  
with the 90° and a 180° phase sampling clocks.

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5. The look-ahead decision feedback equalizing receiver of  
claim 3, wherein the over-sampler even over-samples the  
outputs of the first and the second equalizing amplifiers in  
synchronization with a 0° and a 90° phase sampling clocks,  
20 and the over-sampler odd over-samples the outputs of the  
third and the fourth equalizing amplifiers in  
synchronization with the 90° and a 180° phase sampling  
clocks.

25 6. The look-ahead decision feedback equalizing receiver of  
claim 4, wherein the MUX block includes:

a MUX even for multiplexing the outputs of the over-sampler even in accordance with a first select signal from the MUX odd to thereby select first MUX decision results among the outputs of the over-sampler even; and

5 a MUX odd for multiplexing the outputs of the over-sampler odd in accordance with a second select signal from the MUX even to thereby select second MUX decision results among the outputs of the over-sampler odd.

10 7. The look-ahead decision feedback equalizing receiver of claim 5, wherein the MUX block includes:

a MUX even for multiplexing the outputs of the over-sampler even in accordance with a first select signal from the MUX odd to thereby select first MUX decision results 15 among the outputs of the over-sampler even; and

a MUX odd for multiplexing the outputs of the over-sampler odd in accordance with a second select signal from the MUX even to thereby select second MUX decision results among the outputs of the over-sampler odd.

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8. The look-ahead decision feedback equalizing receiver of claim 6, wherein the phase detector increases, decreases or fixes a delay in the timing of the sampling clock in accordance with the first and the second MUX decision 25 results.

9. The look-ahead decision feedback equalizing receiver of  
claim 7, wherein the phase detector increases, decreases or  
fixes a delay in the timing of the sampling clock in  
accordance with the first and the second MUX decision  
5 results.